

Cornucopia Group of mines.
by, T.S. O'Brien. M.E.

1250 0005

(49) 1.---
Items

Mr. A.R. T. Lackie.
San Francisco, Cal.

Dear Mr. Lackie:-

With reference to the "Cornucopia Group of mines" and Leopard patented claim in Elko County, Nevada, which the writer looked over with you on Dec. 14th, 1924, I wish to say that after seeing the ground, sampling the Leopard outcrop and verifying the data contained in the reports of Edward Peacock and W.B. Jenness on this property, that it checks up a 100% on tonnage and values, and as these reports fully cover the location and geology of the district, it is needless to repeat it in this report.

Besides the Leopard mine the only check samples taken were on the Boston showing 50¢ gold and 55.98 oz of silver per ton, which was considerably higher than claimed by Mr. Peacock.

Samples No. 3 dated 12-14-24 having a value of \$2.33¢ was a wall rock from the 40 ft vein which was trenched out of the Leopard tunnel by Mr. Peacock, and indicates that the values in places extend from the vein out into the wall rock for a considerable distance.

The main object of my visit to these properties was to determine the value of the large outcrop of ore on the North end of the Leopard mine, as shown on the plan view sketch attached, which shows the vein to be 40 ft wide with a strike of North 20° E, and a dip of 65° to the West. This vein passes through the Leopard and into the Daisy claim.

Point A on the outcrop of the vein is about 500 ft south of the North end line, and is 175 ft higher in elevation than the portal of the Leopard tunnel. Point B is 300 ft North of point A, and is 128 ft higher in elevation than the portal of the tunnel of the Leopard mine. Between these points A and B for the entire distance of 300 ft, and covering the full width of the vein, trenches, open cuts, and shallow shafts from 6 to 60 ft deep have been cut in the ore body, thus exposing it in ideal condition for sampling.

As the whole mass of the dumps and outcrop in place is of the same character, I took two grab samples each covering 40 ft wide by 150 ft long of the various dumps and outcrops in place in order to get the average value as it could be mined and delivered to the mill.

The average of these two samples as per duplicate assay reports of Abbott A. Hanks, dated 12.18. & 19-1924 hereto attached, shows a value of \$15.17¢ gold and silver, which is exceptionally high and rarely found in an ore body of this size.

A number of samples of this same outcrop were taken in the past by Mr. Peacock covering a width of 15 ft which shows an average value of \$20.00¢ per ton, indicating that the center and most siliceous part of the vein contains the higher values.

The average depth of the ore body between A & B and down to the Leopard tunnel is 150 ft. Taking a safe width of 30 ft wide by 300 ft long by 150 ft deep, and assuming 14 Cub ft per ton in place would show 96,428 tons above the Leopard Tunnel level which is available for mining by the glory hole method, after the Leopard tunnel has been extended about 400 ft to point A., and an upraise run from it to the surface.

The gross value of the ore in this block of ground would be \$1,462,812.76¢ and the cost of mining and milling after the tunnel extension and upraises were completed would not exceed \$4. per ton, and as the ore contains no interfering elements detrimental to the cyanide process the tailing loss would not exceed \$1. per ton, making a total of \$5. per ton working cost and tailing loss, leaving a net operating profit of \$980,672.76¢ from this block of ground, between the Leopard mine tunnel, and the surface outcrop.

From the reports of the former mine Supt, and old timers who worked in the Leopard mine, it is a well established fact that the Leopard Tunnel was the original opening on the property, and in driving this tunnel they struck a rich streak of high grade ore having an average width of 4 ft and a length of 200 ft. This ore did not extend very far above the tunnel level, and it is very evident to me that the large number of trenches, open cuts and

and shafts on the vein outcrop between the points A and X B. were made by the Old Timers in search of the high grade ore found in the tunnel. Next finding it, they sunk a winze from the tunnel to a depth of 127 ft, as shown on cross-section attached. Later on the deep shaft was sunk and a drift from the 220 ft level was run to connect with the bottom of the winze as shown on the cross-section. They also ran levels from the 300-400- and 500 ft points in the shaft to the vein, from which the high grade streak of ore were mined.

Mr. W.B. Jenness, in his report dated 7/15/07 refers to statements of miners who worked in the mine, to the effect that below the 600 ft level there is a vein of milling ore 40 ft wide with rich streaks of \$200. to \$300. values running through the vein.

This indicated to me that that the streak of high grade ore which averaged 3 to 4 ft wide, and 200 ft long, extending from the tunnel level down to the 500 ft level in the shaft, split up into several small streaks, making it unprofitable to mine at that time, for in order to get out one ton of high grade ore, it was necessary to take out 10 to 15 tons of a lower grade or mill ore, having values such as I sampled on the outcrop between points A and B. As the ore of the value of \$15.17¢ could not be handled at that time to a profit, even by the well known glory hole method, they were obliged to leave untouched the large tonnage between the Leopard tunnel level and the surface.

If the ore between the tunnel level and the surface could not be mined profitably at that time, then it can be safely assumed that similar ores below the Leopard tunnel level would also be left by them. However modern machinery and mining methods now permit this ore to be mined and milled to a profit at a cost of \$5. per ton, including the tailing loss.

Referring to the cross-section, it is clearly shown that the surface vein outcropping at A & B and the workings on the vein in the tunnel and along the winze to a depth of 127 ft below the tunnel level is the same vein encountered below the 600 ft level in the shaft, and as the distance from the tunnel level to the 600 ft level of the shaft is about 600 ft on the slope of the vein, there would be 385,712. tons of ore in this block of ground as the values of the high grade streak maintained a value of from \$200 to \$300. per ton down to the 600 ft level, it is reasonable to expect that the values of the entire vein will also hold up to the values as shown on the surface thus giving a value of \$5,785,680. from the block of ore between the tunnel level and the 600 ft level in the shaft.

This combined with the tonnage above the Leopard tunnel, makes a total value of \$7,248,492. from the 600 ft level in the shaft to the surface outcrop A-B. This body of ore has been proven beyond doubt.

The geological conditions in this district, (See U.S. Bulletin No. 408) are favorable for the veins to extend to a depth of several thousand feet, and with the fine surface showing existing on the various claims of this group of properties has a wonderful potential value, for when the old Hussy Mine, now known as the DAISY, the BOSTON, MONTANA, SANTA RITA and other claims of this group are re-opened and further development done, it is reasonable to expect that with the excellent showing of mill ore on the surface of these claims, together with the known production of high grade ore from these properties, that a number of mines as good or better than the Leopard will be found.

The Leopard mine is well proven and of exceptional merit, and the only reason that it has been idle since 1880 is that it was owned ever since by a rich cattle man, and he would not sell except for a high spot cash price, and who refused to consider any leases..

While it is not possible to prepare a detailed and itemized list of the various items of machinery and equipment, with the cost until cyanide tests now underway are completed. I would say from my experience that it would cost about \$300,000. to install equipment and buy the Leopard mine, making the mill a 100 ton capacity, a modern cyanide mill, and power plant, hoist, etc.

In addition to the ore tonnage above described, there are now on the Leopard and Daisy Dumps about 50,000. tons of ore, having an average value of about \$7. per ton, . Allowing \$4. per ton for handling and treatment, these dumps

alone have a net value of \$3. per ton, or \$150,000. In addition to the large dumps there are about 1,000 tons of ore scattered on the various claims, having a gross value of \$35. per ton. Allowing \$5. per ton for handling and treatment would leave a net value of \$30,000. Thus in the dumps there is a total net value of \$180,000.

In conclusion, I will state that, basing my opinion on the excellent surface showing, the production from the various operations, the area and tonnage of undeveloped ore bodies, together with the favorably known geology of the district, I would say that this group of mines, when developed, will prove to be one of the most valuable mining properties in the country.

Very truly yours,

Dec, 22nd, 1924.

T. S. O'Brien.

U.S. Geological bulletins and statements made by Wm H. Emmons, P.H. D. concerning the geology of the Cornucopia Mining Dist in his book. Note:-Prof Emmons is now the head of Geology and Mineralogy, Univ of Minn, was formerly geologist, section of Metalliferous deposits, U.S. Geological survey, and is the author of "Principles of Economic Geology" pub in 1918., and other standard text books on the same subject...

U.S. G. S. Bulletin No. 408, "A Reconnaissance of some mining camps in Elko, Lander and Eureka Counties, Nevada, by Wm H. Emmons, deals with the district in which the Cornucopia Group of mines are located.

The survey was made in 1908, and the bulletin published in 1910. In this bulletin Mr. Emmons described the geology of this region, giving a brief resume of the geologic history. The deposition of ore deposits is described as occurring in two periods. The first or earlier deposition was formed when certain intrusions occurred in the Cretaceous period. The most important mineral deposited in this period was gold.

The 2nd deposition occurred in the Tertiary period. The igneous rocks are in the main rhyolites, andesites and ~~max~~ basalts. These rocks intruded into or were extruded over the country. During the activities of this time large ore deposits were formed which includes those at ~~xxxxxxx~~ Cornucopia, Tuscarora, Good Hope, Falcon, ~~xx~~ Stafford, Lynn, Gold Circle, and many others. Silver is the most important ore mineral and associated with it is gold, there is only a small amount of base metals such as copper, lead, antimony etc., present in these deposits.

Rhyolite and Andesite form the country rock and all the ore bodies are either in the andesite or in the rhyolite near by. The ore bodies are either fissure veins or sheeted zones.

The "Cornucopia group of mines" are about 7 miles Southwest of a stage station called Deep Creek, and were operated in the Seventies when they produced over a \$1,000,000. in silver and gold. The ores were treated by the pan amalgamation process in a 20 stamp mill, 2 miles below the town.

The principal mines were the Leopard, and the Panther which were operated through shafts. The Leopard shaft is 800 ft deep, but the opening is now caved, and only the surface workings could be examined.

The surrounding country is a large area of low hills capped by rhyolite and obsidian. The rhyolite has phenocrysts of quartz, oligoclase, pyroxene, magnetite and a little hornblende. This rhyolite is more basic than most rhyolites in the section. Its texture at times is viscidular to porphyritic. The rhyolite is cut by intrusions andesites, a fresh outcrop of which is exposed near the ~~xxxx~~ ruins of the stone house.

The ore is sheeted zones in the andesite. It is white quartz with sulphides forming narrow ribbons. Horn silver and pyromorphite are the ore minerals near the surface. The ~~xxxx~~ proportion of sulphides is small, but very rich. This richness is evidenced by the fact that mill ~~xxxx~~ runs of this ore netted the operators 400 ounces of silver to the ton of ore."

In "Principles of Economic Geology" by Wm H. Emmons, pub in 1918, the type of ore bodies, as are found at the Cornucopia group of mines, is substantially described as follows:-

The deposits of this kind have produced a large part of the world's silver and considerable amount of gold. They occur commonly in regions of late igneous activity.

The ore bodies of this class are found at such mines as on the Comstock Lode and at Tuscarora, Tonopah and Goldfield, Nevada. The general shape of these deposits is sheet like. They are short in thickness compared to length and depth. They may lie horizontal, vertical or at any angle between these two extremes.

In size they range from small fissures to enormous bodies. The precipitating action is such as to throw the metals down in large masses. Indeed this class of deposit more than any other may be called the "Bonanza" group."

Copied from State of Nev records, pages 33-34.

"The Cornucopia Dist was discovered in July, 1873, by a Mr. Burfee, he located two claims, one he called the Leopard, and the other the Chloride, assays gave astonishing results of \$17,000. per ton. A quartzite dyke cuts the hill in a north east and southwest course through a formation of porphyry. The locations were mostly made on this quartzite which is about 150 ft wide.

Small veins were found all through the quartzite, assaying from \$5. to \$10. per ton. In the Leopard mine the w vein of the pay ore was from 3 to 7 ft wide. 1500 tons of the ore will work \$100. per ton. This company recently built a 10 stamp mill which started up last month. The mill is situated on Deep Creek, about 2 1/2 miles from the mines.

It is also situated about 6 miles from the south fork of the Owyhee River, and is surrounded by fine agricultural and grazing lands. The hills in which these mines are found are bare of wood, and are low, fine bunch grass has taken the place of the sage brush. In addition to the work done on the Leopard, some work is also done on the Chloride, Constitution and Mammoth.

Dated 1873 -1874.

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(49)
Item 5

LA PLATA GROUP OF MINES
ELKO COUNTY.
NEVADA.

Report by Dr. J. Von Gal-Scale. Geologist.

SUPPLEMENTARY GEOLOGICAL REPORT:-

To the engineers report made by W.B. Jenness, Edward Peacock and T.S.O'Brien on the Leopard Mine, and the New York group of mining claims, respectively.

-----INTRODUCTORY REMARKS.-----

The La Plata group of mining claims were originally known under the collective name of New York group of mines, and later on as the Cornucopia group of claims..The change in the names were due to the fact that the claims were located and re-located three different times. & Each locator re-named and grouped newly the claims; but they occupy one and the same territory, and are grouped all around the Leopard Mine, which was worked on a large scale from 1875 to 1879.

In the New York group of claims there were 10 claims, which in W.B. Jenness report are enumerated; but these names have no significance or bearing upon the present situation; because they are superseded by the new locations.

In the 1st re-location of the claims, numbering 12 were grouped under the name of Cornucopia Mining claims. Edward Peacock in his report enumerates one by one, the claims and correlates the names with the old names in the New York group of claims.

The present owners of the La Plata claims located in 1927 and 1928 the territory and changed the names of the claims which were included in the Cornucopia group, and used the names of LA PLATA for most of the re-located claims which are now known under the collective names of, La Plata group of mining claims.."

In the last La Plata location the boundaries of the Cornucopia group of claims were to some extent changed. The same took place in the Cornucopia re-locations also..

In the original locations, according to Jenness and Peacocks report, the claims were in an easterly and westerly direction. In the Cornucopia re-location the course of the claims was changed to a Northwesterly and Southeasterly direction, which was logical; because the Leopard Mine around which all the other claims are grouped, has a northerly and southerly course. In the La Plata group this Northerly and Southerly course is yet more pronounced than it was in the Cornucopia group.

With the help of an old map the writer of this correlated the claims in the La Plata group to the claims in the Cornucopia claims. The following paragraphs show the relations. The La Plata claim corresponds to the same as the Daisy claim.

La Plata claim No. 1.

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Hidden Treasure

" 1

Yampa claim

Boston.

Montana

Ben Hurr

Mohawk

Victor

Santa Rita

Sioux

Colorado.

Mayflower

The Lucky Lady, Mountain Queen, Valley Queen, El Oro, El Oro, No. 1, Raven Raven No. 1. Wedge and Winnexr claims were located in 1932 and were added and joined to the La Plata group of claims, also included the Man lode claim.

All claims are held by mineral locations under the U.S. Mining laws, and that of the state of Nevada, therefore the title is a possessory and is clear. The owners were still living and live on the property, doing the necessary Annual work, and development work which are duly recorded.

The claims are situated in Sections 7-8-17-18-19-20 T 42 N.,-R 51.E.-M.D.M. Elko, County, state of Nevada.

To avoid a repetition, I will confine my geological observations to the facts which I found on the ground when there in 1932, and which are not found and treated, respectively, in the engineers reports referred to above.

The most striking feature of the territory, which strikes, must, even the casual observer, is that the territory is badly broken up, which resulted from the excessive disturbances, volcanic actions to which the whole North part of Nevada was subjected in the past geological ages. The result of the disturbances are two fold. The first is that the territory is thoroughly mineralized to an unknown extent. 2nd, that the mineral deposits are, to some extent irregular.

The best characterization which may be applied to the territory is in question, can be expressed in these words: "irregularities are the regularities". The irregularity manifest itself in two ways. First the veins, containing the mineral bearing ore, are, through continuous, interrupted by several minor faults, 2nd. The ore veins are compressed sheet shape. The values in the compressed sheets are in Andesites..

This ore when decomposed is extremely rich. At one place, just a few feet below the surface, on the Hidden Treasure claims, about midway, I advised the owners when I was there to concentrate their development work, at the places I pointed out, and a very rich vein was discovered in the decomposed Andesite. The ore assayed 1907 ounces, silver, and 7.0 ounces gold. True the vein is just a ~~xx~~ stringer, but it has the ear-marks of great possibilities.

By far the greater values are in, and will be found in quartz. The compressed sheet veins are interrupted by smaller and larger pockets and in these pockets the mineral bearing ore in quartz, mostly white, carrying sulphides.

Even at the surface there are evidences of the pocket formations. The stories handed down by the men who worked in the Leopard Mine, testify to the fact, that immense large pockets, each yielding many thousands of tons of ore, were found in the Leopard Mine.

Official records and private documents show that the Leopard mine while in operation from 1875 to 1879 produced over \$2,000,000.00 worth of silver and gold. About $\frac{2}{3}$ silver and $\frac{1}{3}$ gold, and this ratio, no doubt will continue.

As all the veins which were discovered in the Leopard Mine continue their course through all the adjacent claims, and what is more, the meagre recent development work and operations prove this fact; because ore veins were discovered in every claim; therefore, there is no question about the presence of mineral bearing ore.

The whole territory is proven. The only question is, the lower or higher values in the ores, but the values taken out of two claims, the Leopard mine and the Daisy (Hussy) claims, point to the conclusion, that immense values are hidden in the La Plata group of claims. No estimates can be made regarding the expected tonnage; but it can be safely stated that it will run into millions of tons.

On the La Plata group of claims I found three large piles of mine dumps ore. Regarding the tonnage I made careful estimates, which greatly differ from tonnage in the engineers reports; but my estimates were corroborated by several competent engineers who were interested in the properties and made calculations as to the tonnage. They all estimated about 100,000. ~~xxx~~ tons.

Regarding the values in the dumps. It must be born in mind, that at that time when the engineers made their reports the silver was worth about 54¢, and right now is a little lower, but on the other hand the gold values is almost double of that which was at that time when the reports were written; therefore, I feel justified in my statement, that the dumps, will average between \$5. and \$6. to the ton.

With modern methods and equipment the ore can be treated at a maximum cost of of \$2. per ton, therefore there is ready made values in the dumps which will net around \$300.000. about.

A mill of a 100 tons a day capacity, and the other necessary equipment will cost about \$50.000.000., therefore it can be readily seen, that a comparatively small investment in such a large project will yield very large profits from the mine dumps alone, but in my opinion the mine dumps should be treated and milled together with the newly mined ores. In this way the values in the dumps could be increased and brought up to \$12., or even to \$15. per ton.

In the La Plata group of mining claims thousands of tons of lower grade ore could be mined, near to the surface, at almost a nominal cost, and then mixed with the mine dumps ore, and thus secure higher returns.

The Leopard Mine is not a subject of ~~yx~~ this report, it does not belong to the La Plata group of mining claims, but if a prospective purchaser would be interested in the Leopard Mine, I am sure it can be secured at a reasonable price, and on good terms/..

Water for milling purposes ~~xx~~ can be secured and brought down by gravity from three lively springs, about 2½ miles away from the claims.

For doestic purposes there is ~~xx~~ excelent water in shallow wells on the camp grounds.

An other source of milling water would be the water in the Leopard mine which can be had, or the mill can be built on the old Mill-Site along the creek which is four miles away, or better still erect the mill at the mine, and pump the water from Deep Creek to the mine and mills, assuring the camp a domestic supply as well as fire protection at same time.

The nearest supply source for light and medium heavy supplys would be Elko, Nevada, the County seat of Elko, County~~x~~, which is about 67 miles distant, which is on the the S.F and W.P. Rys, which Rys connect with the larger supply centers, such as Salt Lake City, and San Francisco, where there are located smelters, and large supply houses of all kinds.

Dated Oct, 26th, 1935.

Dr. J. Von Gal- Scale.
Geologist.

Copied from the original.

- A- The DUMPS of the LEOPARD workings are all on the LA PLATA and HIDDEN TREASURE NO. 1 claims. About 100,000 tons of mine dumps.
- B- Location of large bodies of mill ore, around 20 ft. wide.
- C- This vein was never cut on the LA PLATA (HUSSEY) ground and there was no drift back to the crossing.
- D- Intersection of 2 veins has never been exposed. The vein was not cut at the 500 ft. point, but was cut at the 200.
- E- Over \$1,050,000. was taken out of this vein where it crossed the LEOPARD ground, in the first 600 feet (by tax receipts) and more than \$80,000. out of the LA PLATA (HUSSEY) shaft above the 200 ft. level on the same ore chute.
- F- Location of the old HUSSEY shaft, now the LA PLATA.
- G- LEOPARD shaft is only about 25 feet from the south end of the LA PLATA and about 100 feet from the west side line of the HIDDEN TREASURE NO. 1.

NOTE - These markings on the Claim Map are independent of and have no reference to the "Points A & B" mentioned in the report of T. S. O'Brien, E.M.

The above data furnished by J. B. Truitt, Assayer, Tuscarora, Nevada, February 22, 1936

You may have to hold map up to the light to see markings.

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Items*

IDAHO

NEVADA



1250 0005



(Victor)

all owned except the
Leopard + it can be
had.

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cornucopia 1839

Tip Top Hill about 500ft above main shaft.

Map showing La Plata & adjoining claims
Cornucopia Mining Dist
Elko County, Nevada.

Scale 500 Ft = 1 inch

Old names of claims
are shown thus (Montana)

by R.E. Tilden, C.E.
& U.S. Min. Surr.
Berkeley, Calif.

June 1936.

49
Item 5



Map showing La Plata & adjoining claims
 Cornucopia Mining Dist
 Elko County Nevada
 Scale 500 Ft = 1 inch

Old names of claims
 are shown thus (Montana)

June 1935.

by R.E. Tilden, GE
 & U.S. Min Surr
 Berkeley Calif.



Map showing La Plata & adjoining claims
 Cornucopia Mining Dist
 Elko County, Nevada.

Scale 500 Ft = 1 inch.
 Map drawn from owners sketch.
 Old names of claims are shown thus (Montana)
 by R.E. Tilden, CE
 & U.S. Min. Surv.
 Berkeley Calif.
 June 1937

Tip Top Hill about 500ft above main shaft.